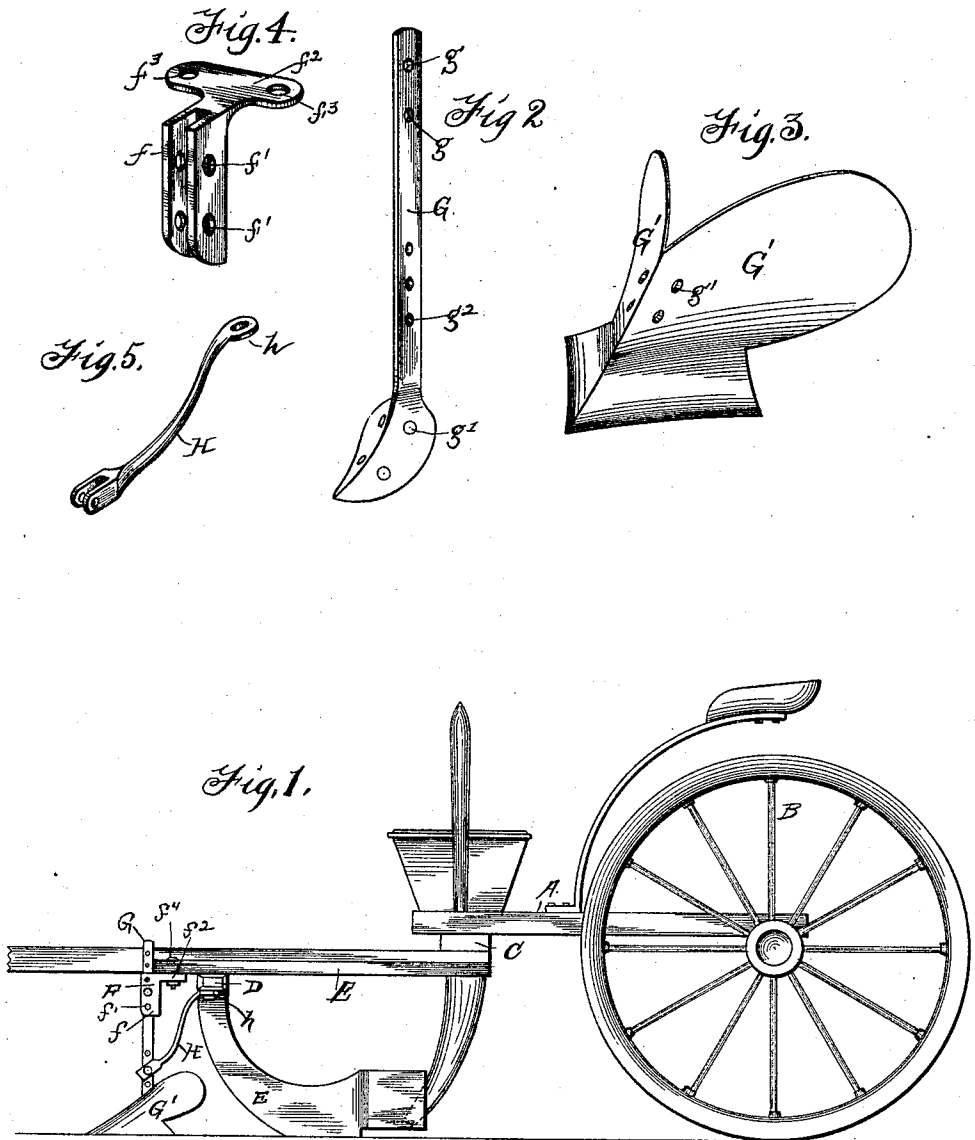


(No Model.)

H. FIENE & J. E. KROENCKE.
SEED PLANTER.

No. 486,669.

Patented Nov. 22, 1892.



Witnesses:-
W. P. Smith
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By Simpson & Nippon Atty's.

UNITED STATES PATENT OFFICE.

HENRY FIENE AND JACOB E. KROENCKE, OF CONCORDIA, MISSOURI.

SEED-PLANTER.

SPECIFICATION forming part of Letters Patent No. 486,669, dated November 22, 1892.

Application filed September 29, 1892. Serial No. 447,343. (No model.)

To all whom it may concern:

Be it known that we, HENRY FIENE and JACOB E. KROENCKE, of Concordia, La Fayette county, Missouri, have invented certain new and useful Improvements in Seed-Planters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

Our invention relates to corn-planters of the ordinary type, wherein a frame carrying two seed-boxes, one at each end of the frame, provided with seed-spouts, and runners in advance of the seed-spouts open the furrows for the reception of the seed, which is either dropped by hand-actuated valves on the machine or by means of a check-wire of well-known construction.

The object of our invention is to provide machines of this type with an improved attachment to be used especially when the soil is hard or when the exigencies of the season require unusually-deep planting; and the improvement consists in securing to the frame of a planter of ordinary construction having seed-box, spout, and runner provided with seed-dropping mechanism a furrow-opening or small listing plow adjustably secured and supported upon the forward end of the frame in a novel manner in advance of the runner, which may be placed at any required depth, for the purpose specified.

In the accompanying drawings, Figure 1 is a side elevation of a corn-planter with our improvements attached. Fig. 2 is a perspective detail, enlarged, of the furrow-opening plow-standard. Fig. 3 is a similar view of the mold-boards thereof. Fig. 4 is a perspective of a bracket secured to the forward end of the frame to receive the standard. Fig. 5 is a brace-rod for connecting the lower end of the standard with the forward cross-bar of the frame.

The planter-frame A, of usual construction, mounted upon wheels B, having an intermediate cross-bar C for supporting the seed-boxes and seed-tubes, and a forward cross-bar D, to which the forward ends of the runners E, of usual well-known form, are attached. To the forward end of the longitudinal frame-brace E is secured our improved

attachment, comprising a bracket F, having side flanges *f* with a series of bolt-holes *f'* passing through them, and horizontal rearwardly-projecting plate *f*², laterally extended, and having bolt-holes *f*³, through which bolts *f*⁴ are passed and are also passed through the forward end of the frame-brace to securely hold the bracket upon it.

The furrow-opening plow-standard G, also perforated correspondingly at *g* with the flanges of the bracket, snugly fits between said flanges and may be raised and lowered longitudinally therein and held at any required point of elevation by bolts passing through the bracket-flanges and through the standard and is spread at its lower end and perforated at *g'* to receive the bolts or rivets which secure it to the double mold-boards G' G'. The lower end of the standard is also bored with bolt-holes *g*², and a curved brace-rod H, bolted securely at its upper end at *h* to the cross-bar D of the machine may be secured to any one of the series of holes in the lower end of the standard to admit of the adjustment of the brace upon the standard correspondingly with the adjustment of the standard in the bracket.

By the above-described means the furrow-opening or listing plow may be readily attached securely or adjusted upon the frame of any ordinary corn-planter or removed therefrom when not required to be used and the opening furrow may be made of any required depth. For listing in hard ground or for deep subsoil plowing and planting at a single operation, the usual furrow-opening runner, being still retained upon the planter, following closely behind the opening-plow, keeps the furrow clear until the seed is deposited in the bottom of the furrow. The runner, extending forwardly and upwardly and bolted at its forward end to the forward cross-bar D, together with the brace H and standard G, provides a solid connection, which will permit hard ground or even sod-ground to be planted in the manner of listing with a check-row corn-planter.

We are aware that it is old to place a double-mold-board plow in advance of the grain-delivering spout of a corn-planter and that listing-plows with grain-receptacles and fur-

row-openers and seed-spouts have heretofore been combined, and do not broadly claim said combination of parts.

Having described our invention, we claim as new and desire to secure by Letters Patent—

5 1. A corn-planter comprising a seed-receptacle, seed-spout, runner, furrow-opener secured at its forward upturned end to the
10 frame in advance of the runner, a furrow-opening plow-standard secured between the side flanges of the bracket, and a brace connecting the lower end of said standard with
15 the forward end of the runner and the forward cross-brace, substantially as described.

2. A corn-planter comprising the planter-frame, the seed-box, the seed-spout, furrow-opening runner, and a double-mold-board furrow-opening plow having a standard secured
20 between the side plates *f* of a bracket F, and

the diagonal brace H, secured to the lower end of the standard and the forward end of the opening-runner, substantially as described.

3. A corn-planter comprising the frame, the seed-box, seed-spout, furrow-opening runner, 25 a double-mold-board furrow-opening plow, having upper bolt-holes *g*, a bracket F, having side flanges *f* and bolt-holes *f'*, and a brace H, secured at its upper end to the frame and adjustably secured at its lower end to 30 one of a series of holes in the standard, substantially as described.

In testimony whereof we affix our signatures in the presence of two witnesses.

HENRY FIENE.

JACOB E. KROENCKE.

Witnesses:

WILHELM GRIFFEL,

GEORGE KLINGENBERG.